

found together on a certain vetch, but it was a bit of luck getting the Locustid there too.

33. MIMETIC RESEMBLANCE OF MANTISPIDÆ TO HYMENOPTERA. (E. B. P.)

Prof. W. M. Wheeler, of the University of Texas, was, so far as I am aware, the first to observe the mimicry of Hymenoptera by *Mantispidæ*. "While studying the prairie insect fauna of south-eastern Nebraska early in the summer of 1888," he observed that *Mantispa brunnea* (Say.) closely resembled *Polistes variatus* (Cress), resting half-concealed like the wasp "on the petioles in the terminal leaf-clusters of the golden rods." He was at first quite deceived, and took care to avoid being stung. "The colouring of the *Polistes* is carefully copied; the body is banded with yellow, brown, and black, the wings are smoky brown, and the legs yellow. While lying in wait the *Mantispa* closely appose their large raptorial fore-legs to the lateral faces of the prothorax, which, when these appendages are extended, is so narrow as to resemble but slightly the wasp's thorax. The wings are carried in the same manner by both insects. Several times during the course of a week I found these two insects . . . resting in the same position, both intent upon the slaughter of the many insects . . . which swarmed about the rank vegetation" (Proc. Nat. Hist. Soc. Wisconsin, U.S.A., April 1889, p. 217). Professor Wheeler considers it to be an example of protective mimicry.

Mr. R. Shelford has recently observed that at least four species of *Mantispa* from Borneo and Singapore are beautifully mimetic of Ichneumonids, Bracons, or Aculeates. His observations are now being published by the Zoological Society. I sent a photograph of some of his examples to Mr. Marshall, who replied with the observation printed below. These interesting records constitute, so far as I am aware, a distinct addition to the list of insect mimics of the Hymenoptera. Mr. McLachlan, whom I have consulted, writes that he cannot find anything further recorded about such resemblance on the part of *Mantispidæ*. There can be little doubt, after these observations from three such widely-different regions, that mimicry of the Hymenoptera will prove to be prevalent in the group. Mr. Shelford and

Mr. Marshall both call attention to the cause which has doubtless prevented the fact from being generally recognized at an earlier date, viz. the changes which take place in dried specimens of *Mantispa*. On this account, and because of the important part played by movement, the appreciation of the mimetic resemblance required the study of the living insect.

"*Salisbury, Sept. 21, 1900.*—The large South African *Mantispa grandis* is an excellent mimic, on the wing, of the *Belenogaster* wasps. I caught one at Malvern, on my way home in 1896, which I gave to McLachlan. This insect completely took me in; it flew out of a loquat-tree which I was beating, and I at once took to my heels thinking I had struck a nest of these vicious wasps. Fortunately I kept an eye on the insect, and, as it seemed to be a species of *Belenogaster* new to me, I followed it up and caught it, when to my surprise and delight it proved to be only a *Mantispa*. Unfortunately in a dried specimen the resemblance is much spoilt by the shrivelling and discoloration of the abdomen."

34. CONVERGENT GROUPS OF SOUTH AFRICAN HEMIPTERA (G. A. K. M.)

A. Black and Red Lygæoid Group (Represented on Plate XIX).

Lygæidæ { *Lygæus rivularis* (fig. 44); *L. elegans* (fig. 46); *L. crudelis*
(fig. 47); *Graphostethus servus* (fig. 45).
Reduviidæ *Reduvius* sp. (fig. 43).

In this group I consider that the Lygæids form a Müllerian association, of which the *Reduvius* is probably a Batesian mimic. The former insects are very abundant, occurring on many different plants, but the *Lygæi* are especially fond of the balloon-like seed-vessels of *Gomphocarpus*. The *Reduvius* inhabits much the same stations, though I have never seen it (to my remembrance) actually in company with the Lygæids, and it is a decidedly rarer insect.